

# Technology Corner



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UDOT Research News

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## ***UTAH TRANSPORTATION RESEARCH ADVISORY COUNCIL***

### ***How Research Projects are Identified & Prioritized***

#### **What is UTRAC**

The Utah Transportation Research Advisory Council (UTRAC) consists of thirteen permanent members. This Council is chaired by Doug Anderson, Engineer for Research and Development with the Research Program Manager serving as secretary. Also included is a representative from the Utah Division of the Federal Highway Administration (FHWA). The remaining members are appointed biannually, on a rotating basis, and represent all key divisions of the Utah Department of Transportation's (UDOT) four regions and the central complex.

This council meets quarterly and is charged with providing guidance and focus to UDOT's research program by establishing priorities on proposed studies, funding distribution, study selection, principal investigators, and other lead organizations. UTRAC's other responsibilities include: help in the selection of the Technical Advisory Committees (TAC's) assigned to monitor each approved individual study; evaluate the progress of ongoing studies and approves extensions or terminations; and, review of the implementation plans proposed by individual study TAC's. To help the council in the decision making process individuals representing universities, research organizations, private industries, and state organizations are often asked to attend. These individuals provide valuable expert ideas. They do have a vote on the council's final decisions.

#### **UTRAC Annual Workshop**

A workshop is held each year to help the Research and Development Division (R&D) to identify potential research for its annual research program. The emphasis of the meeting is to identify issues and topics that are inherent to UDOT's strategic goals to maintain a reliable transportation program. This workshop also results in the identification of needed development and implementation strategies to be considered by UDOT.

UTRAC held its fourth annual workshop on March 12-13, 1996 in Logan, Utah on the Utah State University Campus. As in years past the workshop was organized by the Utah Transportation Center under the direction of and funded by UDOT's R & D Division. Attendees from public and private universities, research organizations, consulting firms, and planning agencies, as well as federal, and local government entities joined a contingent of UDOT personnel in an organized brainstorming session addressing UDOT's needs.

This year's meeting was organized into two one-half day sessions. The first day consisted of an "Introductory" and a "Breakout" modules. The "Introductory Module" included overviews of UDOT's R & D program and the Transportation Center at Utah State University. Dale Peterson, Region 4 Director was presented the 1996 "Trailblazer Award" given each year to an individual who has made an outstanding contribution to transportation research in Utah. Keynote speakers included Clint Topham, UDOT's Deputy Director and John Baxter, Assistant Director of Utah's FHWA Division followed by a presentation of ongoing R&D projects by Dal Hawks, Development & Implementation Program Manager. The "Breakout Module" was held in the afternoon and consisted of five groups organized into the following categories:

- Group 1....Construction & Maintenance
- Group 2....Materials & Pavements
- Group 3....Hydraulics, Environmental, Landscape, & Roadway
- Group 4....IVHS, Planning, Traffic & Safety, and
- Group 5....Geotechnical & Structures

Each group was charged with the responsibility of determining "What research projects or related activities would contribute to achieving UDOT's strategic goals for the future. A facilitator was assigned to each group to ensure positive interaction. By the end of the day each group had prepared a list identifying problems in their respective areas of concern.

On the second day, the breakout groups continued their problem assessments. During this session each group



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prepared a final prioritization to arrive at their top six or seven problem areas. These problem areas were then expanded to include: a formal title; individuals to participate in the research; interested organizations; specific research goals; tasks to be completed; and how the results of the study would be used and by whom. From the five groups that met, the following topics were identified:

**-GROUP 1 - CONSTRUCTION & MAINTENANCE**

- ÿ Specification for Shallow and Deep, Stable, Drainable Road base
- ÿ Implement Use of Electronic Field Books
- ÿ Construction Engineering Definition Study
- ÿ Life Cycle of Sign Faces
- ÿ Effectiveness of Pavement Rejuvenation
- ÿ Salt Retention Basin Membranes
- ÿ GIS/ Maintenance Management

**-GROUP 2- MATERIALS & PAVEMENTS**

- ÿ Cost Effective Pavement Rehabilitation Strategies
- ÿ Implementation of Pavement Management in Maintenance Strategies
- ÿ Automation of material database for Portland Cement Concrete
- ÿ Use of Lightweight Aggregates in UDOT Concrete Pavements
- ÿ Fractal Analysis of Aggregate
- ÿ Validation of Utah's SHRP Mix Designs through Partnering with "Westrack"

**-GROUP 3- HYDRAULICS, ENVIRONMENTAL, LANDSCAPE & ROADWAY**

- ÿ Improve Accuracy of Concept Estimates on Projects
- ÿ Improved Temporary & Permanent Erosion/Sediment Control Guidelines
- ÿ Best Management Plan for Winter Maintenance
- ÿ Environmental Streamlining
- ÿ Improve Aesthetics and Graffiti of Sound Walls by Using Native/Adopted Plants
- ÿ Innovative Traffic Control/PR Procedures for I-15 Construction

**-GROUP 4 - IVHS, PLANNING, TRAFFIC & SAFETY**

- ÿ Develop a Process for Prioritizing Right-of-Way or Corridor Preservation Activities
- ÿ Use of Machine Vision to Control Intersections
- ÿ Transportation Options for the 2002 Winter Olympics
- ÿ Decision Support system and Fee Structure for Driveway and Intersection Access
- ÿ Variable Message sign Coordination & Message Criteria
- ÿ Smart PDA: Automated Real-Time Pavement Distress Analysis

**-GROUP 5- STRUCTURES & GEOTECHNICAL**

- ÿ Minimizing Settlement of Fills during I-15 Construction
- ÿ Lateral Load Testing of Model Pile Groups Subjected to Earthquake Motion
- ÿ Reducing Corrosion in Reinforcing Steel of Concrete Bridge Decks
- ÿ Durability of Straps/Connections/Facing Elements of MSE Retaining Walls
- ÿ Salt Migration Behind MSE Walls
- ÿ Seismic Behavior of MSE Wall Abutments
- ÿ In Situ Testing of Abandoned Structures on the I-15 Corridor

The Workshop was closed with a "Summary Module." In this session Sam Musser, Research Program Manager had each "Group" present the results of their breakout session, and provide a prioritized list of potential research projects. William Evans from the FHWA Region 8 Research Office critiqued the workshop highlighting the benefits of UDOT's approach to ensure that users are involved in the planning stages of the R&D Program.

**Summary**

The UTRAC process and its associated annual workshop are one way of ensuring that UDOT's Research Program is addressing the needs of the department. Through these open and aggressive sessions users have the opportunity to express their needs and offer strategies that will keep UDOT on the leading edge of highway technology. However, it must be emphasized that this is not the only avenue available to Personnel in UDOT to have their needs addressed. If during your daily activities a problem is encountered that should be addressed, please contact the R&D Division at the phone number shown on this newsletter. Also, problems can be submitted to the R & D Division on the "**RESEARCH PROBLEM STATEMENT**" Form attached to this Newsletter.

